GX1246S
Horizon Eclipse
25 watt VHF/FM
Marine Transceiver
Owner's Manual
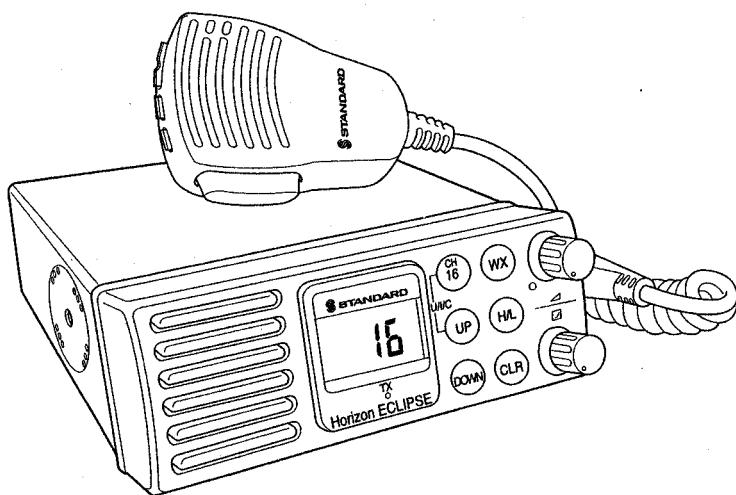
⑤ Standard
® Communications

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1.1 INTRODUCTION

The Standard Communications Corp. (SCC) **GX1246S Horizon Eclipse** is a VHF radio designed for installation aboard a marine vessel. It requires 13.8 VDC for operation.

The radio has 65 channels: 55 marine channels and 10 weather channels. The 55 marine channels are switchable to comply with either USA, International, or Canadian regulations. A CH16 key allows immediate selection of emergency channel 16. A CH9 key on the microphone allows immediate selection of secondary hailing channel 9.

Power output is 25 watts in the high range and 1 watt in the low range. These ranges are manually selectable by a front-panel H/L button except on channels where low power is mandatory (channels 13 and 67). On these channels the low range is automatically selected and the high range is disabled.

1.2 FCC/INDUSTRY CANADA INFORMATION

The following data pertaining to the radio is necessary to fill out the license application:

FCC Type Accepted .... FCC Part 80
Output Power .... 1 watt (Low) and 25 watts (High)
Emission 16F3
Frequency Range .... 156.050 to 163.275 MHz
FCC Type Number APV1092
Industry Canada Type Approval 363 822 002V

> Additional FCC and Industry Canada data, including licensing requirements, are contained in the companion document titled OWNER'S MANUAL SUPPLEMENT. The document also contains charts for VHF channel assignments, operating procedures, maintenance, factory service information, and warranty data.

2.1 CONTROLS AND CONNECTIONS

Refer to Figure 1 for the location of the following controls and connections:

1. **POWER SWITCH/VOLUME CONTROL**
   Turns the radio on and off, and adjusts receiver volume.

2. **SQUELCH CONTROL**
   Adjusts the point at which background noise is "squelched" when the radio is on and no broadcast is being received. A received signal must be stronger than this "squelch level" in order to be heard on the radio.

3. **LCD**
   a. **CHANNEL DISPLAY** - displays the operating channel.
   b. **U, I, and C Indicators** - indicates the region of operation for a channel: U = USA; I = International; C = Canada.
   c. **WX INDICATOR** - indicates a weather channel.
   d. **HI, LO INDICATORS** - indicates power during transmission. "HI" is displayed when power is high and "LO" is displayed when power is low. This display is blank if a transmission-inhibited channel is selected.
   e. **D INDICATOR** - indicates a communication mode. "D" is displayed for a duplex channel. Remains blank for a simplex channel.

4. **CONTROL KEYS**
   The 6 control keys on the radio's front panel function as follows:
   a. **H/L key** - toggles between high and low power. Affects all channels except channels that must always use low power. If the radio is turned off and then on again, it "remembers" the H/L power setting.
   b. **DOWN key** - decreases channel number by one each time the key is pressed. If held depressed, the channel number decreases continuously at a rate of 12 channels per second.
   c. **UP key** - increases channel number by one each time the key is pressed. If held depressed, the channel number increases continuously at a rate of 12 channels per second. ALSO USED TO SWITCH MODES: To switch to USA, INTERNATIONAL, or CANADA mode, press this key and hold down the **CH16** key.
   d. **CH16 key** - immediately selects channel 16. ALSO USED TO SWITCH MODES: Press and hold this key while pressing the **UP** key to toggle between USA, INTERNATIONAL, or CANADA modes.
   e. **CLR key** - if CH16, CH9, or a WX channel is selected, pressing this key returns the radio to the previously selected non-WX channel.
   f. **WX key** - selects weather channel WX01 from any channel. Pressing the **UP/DOWN** keys then steps to the other weather channels.

5. **TX LED**
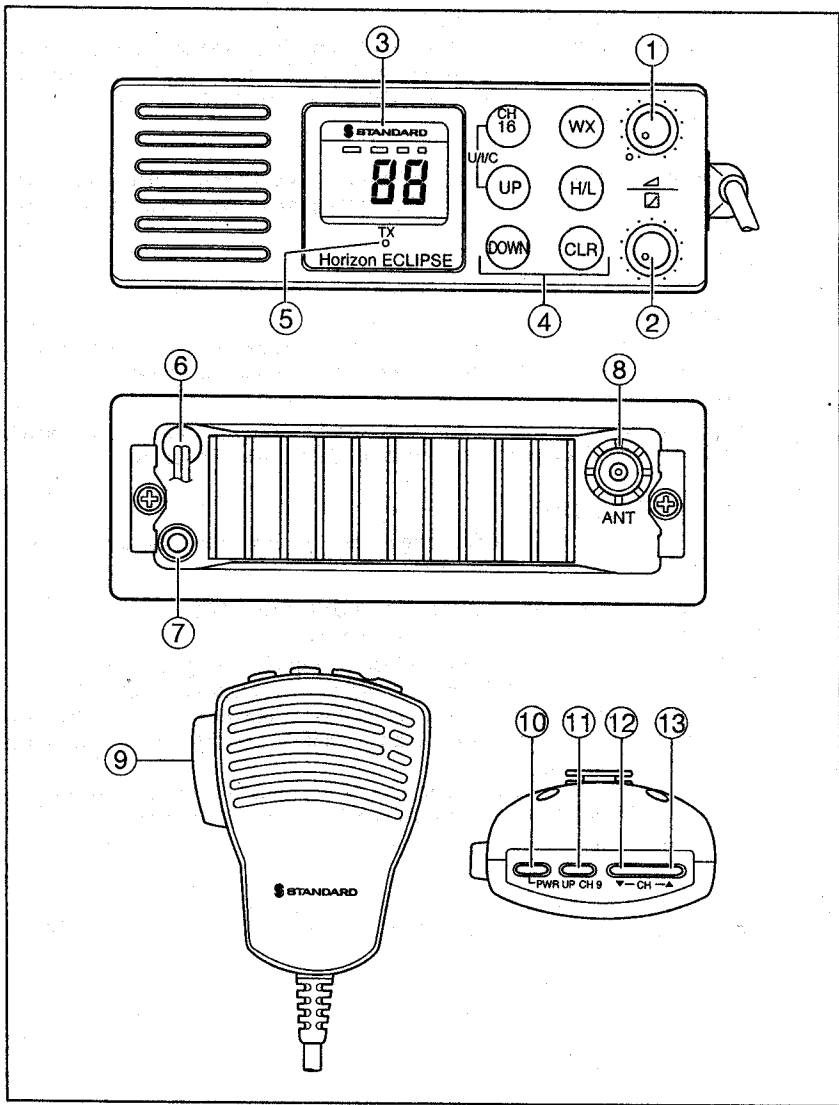   Lights during transmission.

Figure 1. Controls and Connections

6. **POWER CORD**
   Connects the radio to a 13.8 VDC power source. Red wire connects to the "+" side and the black wire connects to the "-" side of the power source.

NOTE

Irreparable damage may result if power source polarity is reversed.

7. **EXTERNAL SPEAKER JACK**
   Connects to an optional 4- to 8-Ohm speaker.

8. **ANTENNA JACK**
   Connects to a 50-Ohm antenna.

9. **PUSH-TO-TALK (PTT) SWITCH**
   Keys the transmiter for up to 5 minutes, at which time an automatic cutoff occurs. To transmit after the timeout, the PTT switch must first be released and then pressed again. This prevents a "stuck microphone" from causing a continuous transmission.

10. **PWR UP KEY**
    Selects high power if operating on USA channels 13 and 67. These channels are programmed for normal operation at low power (1 Watt). This key does not affect power on other channels.

11. **CH9 KEY**
    Immediately selects channel 9, a calling channel in the U.S.A.

12. **DOWN KEY**
    Decrements the channel number each time the key is pressed. If held pressed, channel numbers decrement at a rate of 12 channels per second.

13. **UP KEY**
    Increments the channel number each time the key is pressed. If held pressed, channel numbers increment at a rate of 12 channels per second.

2.2 OPERATION

After the radio has been installed (see section 3), ensure that the power supply and antenna are properly connected.

   a. Turn on the POWER SWITCH/VOLUME CONTROL.
   b. Set the volume slightly to the left of center.
   c. On a clear channel (one on which no signal is being received) turn the SQUELCH CONTROL fully counterclockwise. Make sure that background noise is heard. Then turn the control slowly clockwise until the background noise just disappears. NOTE: If this control is adjusted further, reception will be degraded.
   d. Press the UP or DOWN key to select the desired channel. Refer to the **OWNER'S MANUAL SUPPLEMENT** for channel utilization.

e. Select the operating region by pressing the **UP** key while pressing and holding the **CH16** key. U=USA, I=INTERNATIONAL, C=CANADA on the display.

f. Select the desired power by pressing the **H/L** key.The display will show "HI" for high power and "LO" for low power. Some channels are fixed at low power and pressing the **H/L** key will not alter their power.

g. Before transmitting, be sure that the channel is clear. Press the microphone PTT switch. The TX LED will light. Speak slowly and clearly into the microphone. If the PTT switch is pressed continuously, an automatic shutoff will occur in 5 minutes. You must then release the PTT switch and press it again to initiate another transmission.

h. After transmitting, release the PTT switch to receive. Adjust the volume control for the best reception.

i. Refer to the **OWNER'S MANUAL SUPPLEMENT** for standard radio operating procedures and channel utilization.

3   INSTALLATION

3.1 FREQUENCY AND DEVIATION TESTS

FCC regulations require that the radio's frequency and deviation and frequency be tested before initial installation or operation. This test should be performed by a Certified Marine Technician.

3.2 INSTALLATION

1. The radio can be mounted at any angle. Choose a mounting location that:

    *   is far enough from any compass to avoid erroneous compass reading due to the speaker magnet

    *   provides protection from sea spray and rain

    *   provides accessibility to the front panel controls

    *   allows connection to a power source and an antenna

    *   has nearby space for installation of a microphone hanger

2. After choosing the location, fix the attitude of the front panel. It can be tilted up or down as illustrated in Figure 2.

3. Install the unit in accordance with paragraph **3.2.1**, or **3.2.2** .. Somewhere in each appears an instruction to connect the power and antenna. Where that appears, the following three steps should be performed:

    a. At the rear of the radio, connect the antenna cable to the antenna jack. The antenna must have a PL259 connector. RG8 or RG213 coaxial cable must be used if the antenna is 25 feet or more from the radio. RG58 cable can be used for distances less than 25 feet.
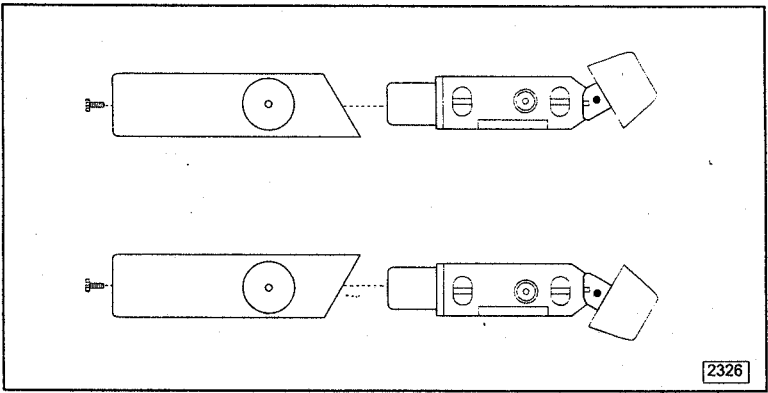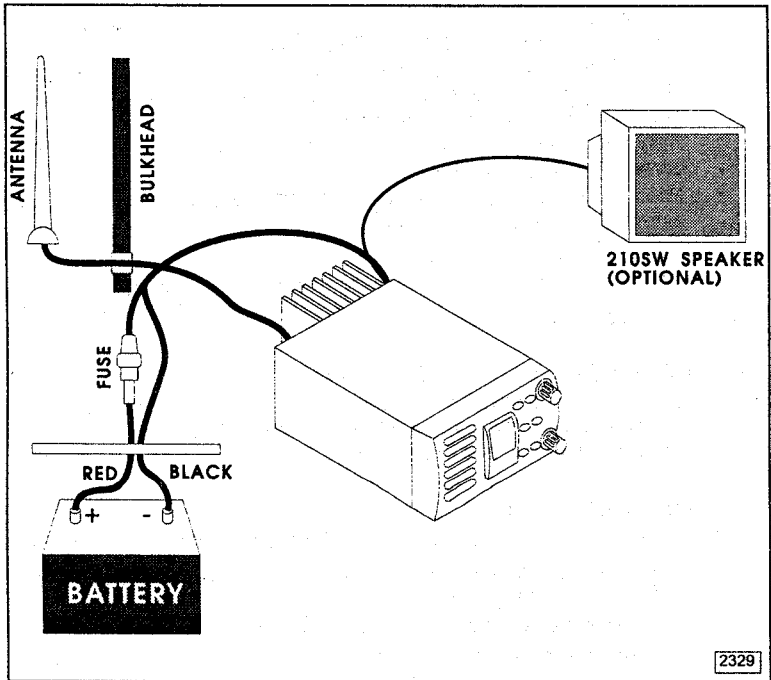
Figure 2. Front Panel Attitudes

Figure 3. General Installation

b. Connect the red power cord to a 13.8 VDC ± 20% power source. Connect the black power cord to negative ground. See Figure 3 for this step.

c. It is advisable to have a Certified Marine Technician check the power output and the standing wave ratio of the antenna after installation.

3.2.1 INSTALLATION USING REGULAR MOUNTING BRACKET

1. Mount the bracket using the washers, nuts, and long hex head bolts.

2. Thread the mylar washers onto the mounting bracket knobs.

3. Position the radio within the bracket arms, matching the radio notches to obtain the desired positioning.

4. Secure the radio to the brackets with the mounting knobs (see Figure 4).

5. Connect the antenna and power cables (and optional speaker) to the radio.

3.2.2 INSTALLATION USING CMB11 FLUSH MOUNT BRACKET (Optional)

Refer to Figure 5 for the following procedure.

1. Use the template supplied with the CMB11 to mark the screw hole locations and area (inner template) where a rectangular hole (5-7/8 by 2-3/8 inches) is to be made. Confirm that the space behind the dash or panel is deep enough to accommodate the radio. There should be at least 1/2 inch between the radio's heatsink (fins) and any structure, wiring, or cables.

2. Cut out the rectangular hole.

3. Insert the radio into the bracket and fasten with the two screws provided with the CMB11. Connect the antenna and power cables (and optional speaker).

4. Slide the bracket into the hole. Fasten the four screws into the holes in front of the bracket.
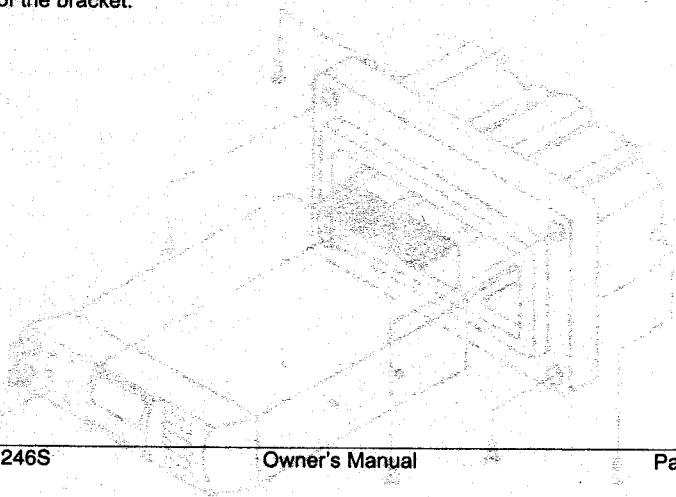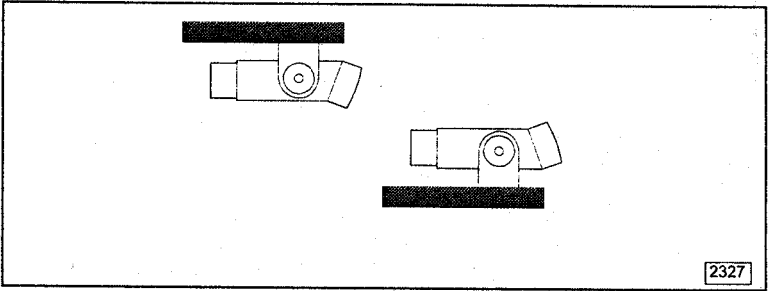
Figure 4. Regular Mounting Bracket
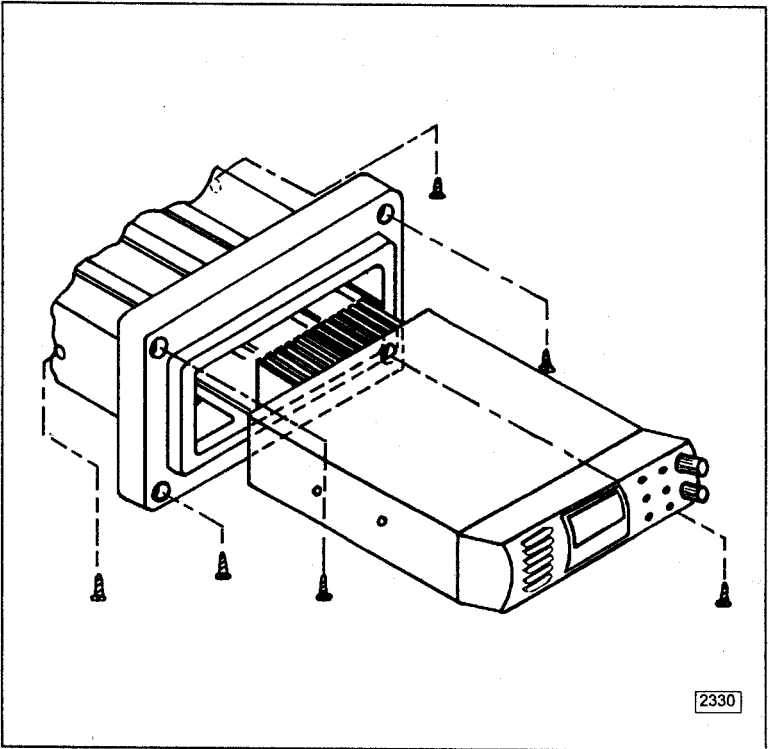
Figure 5. Flush Mounting Bracket

3.3 AVAILABLE OPTIONS

The following optional items are available for use with the radio. Contact your SCC Dealer for information on these items.

OPTION	DESCRIPTION
201S	Remote Extension Speaker with RCA Phono Plug
CMB11	Flush-Mount Mounting Bracket
DC23	Dust Cover

4   MAINTENANCE

For preventive maintance and instructions on obtaining factory service, please refer to the **OWNER'S MANUAL SUPPLEMENT**. For general troubleshooting, refer to the Troubleshooting Chart on the following page.

TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	REMEDY
Radio fails to power up.	No DC voltage to the radio or blown fuse.	Check power cable for DC voltage or replace 6A 250V fuse.
Radio blows fuse upon connection to power supply.	Reversed power connections	Be sure RED wire is connected to POSITIVE battery terminal and BLACK wire to NEGATIVE. If radio still blows the fuse, contact your SCC Dealer.
Popping or whining noise from speaker while engine runs.	Engine noise	Reroute DC power cables away from engine. Add noise suppressor on power cable. Change to resistive spark plug wires and/or add an alternator whine filter.
External Speaker plug does not fit into jack.	Incorrect plug on speaker cable.	The external speaker jack will accept only RCA phono plugs.
Internal speaker turns off when external speaker is plugged in.	No problem.	Normal radio operation causes internal speaker cut-off when external speaker is plugged in.
Radio transmits but doesn't receive.	Channel mode	The radio may be tuned to a duplex channel meant for ship-to-shore radiotelephone communications. This situation is indicated by a "D" on the LCD display.
Radio transmits on low power only.	Antenna	Have antenna checked or test the radio with another antenna. If problem persists, contact your Dealer.

Performance specifications are nominal, unless otherwise indicated, and are subject to change without notice.

5.1 GENERAL

Frequency Range . . . . 156.050 to 163.275 MHz
Channels. . . . . 65 total: 55 marine + 10 weather
Input Voltage. . . . . 13.8 VDC ± 20 %
Current Drain:
   Standby . . . . 0.5 A
   Receive . . . . 1.5 A
   Transmit. . . . . 6 A (Hi); 1.7 A (Lo)
Physical Characteristics . . . . 2.4" H x 5.75" W x 7.5" D
                                     (60 mm x 145 mm x 190 mm)
. . . . 1.94 lb. (0.88 kg)
FCC Part. 80
FCC Type Acceptance Number APV1092
Industry Canada Type Approval Number 363 822 002V

5.2 TRANSMITTER

RF Output . . . . 25 W (Hi); 1 W (Lo)
Conducted Spurious Emissions . . . . 65 dB (Hi); 50 dB (Lo)
FM Hum and Noise . . . . 40 dB min.
Audio Response . . . . within +2/-8 of a 6 dB/octave pre-emphasis
                                      characteristic at 300 to 3000 Hz
Audio Distortion. 5%
Modulation 16F3
Frequency Stability (-20° to +50° C) . . . . ± 0.0005 %

5.3 RECEIVER

Sensitivity:
   20 dB Quieting . . . . 0.35 µV
   12 dB SINAD . . . . 0.30 µV
Squelch Sensitivity (Threshold) . . . . 0.16 µV
Modulation Acceptance Bandwidth. . . . . ± 7.5 kHz
Selectivity:
   Spurious and Image Rejection. . . . . 70 dB
   Intermodulation and Rejection at 12 dB SINAD Sensitivity . . . . 70 dB
Audio Output at 5 % Distortion . . . . 3 W
Audio Response . . . . within +2/-8 of a 6 dB/octave de-emphasis
                                      characteristic at 300 to 3000 Hz
Frequency Stability (-20° to +50° C) . . . . ± 0.001 %
Channel Spacing . . . . 25 kHz